BEFORE THE STATE OF WASHINGTON
ENERGY FACILITY SITE EVALUATION COUNCIL

IN RE APPLICATION NO. 96-1	)
	)
OLYMPIC PIPE LINE COMPANY:	)
CROSS CASCADE PIPELINE PROJECT	)
	)
	)

EXHIBIT _____ (MM-T)

REBUTTAL TESTIMONY OF MARTHA MOORE, P.E.

ISSUE:

SPONSOR: OLYMPIC PIPE LINE COMPANY

Q. **State your name and business address**.

A. Martha Moore, P.E.
TW Environmental, Inc.
3626 SE Belmont
Portland, Oregon 97214

Q. Where are you employed and what is your position?

A. I am the President and founder of TW Environmental, Inc. ("TW Environmental"). TW Environmental is a consulting engineering firm specializing in air quality, noise control, stormwater, and industrial wastewater treatment engineering.

Q. Summarize your professional experience.

A. I am a registered professional engineer and have provided air quality engineering services for a variety of industrial clients throughout the United States. Services include regulatory permitting and impact analyses for new project and upgrades to existing facilities. A more detailed list of projects representing my industrial air quality experience is attached hereto as Exhibit MM-1.

Q. What is the subject matter of your testimony?

A. My testimony concerns the impact of the project on air quality. It is intended to respond to the air-related testimony of Damien Hooper (Grant County), Peter Comenzo (Grant), Dee Caputo (Adams) and Mark Pedersen (Eastern Washington Counties). I understand that other witnesses have filed testimony that purports to assess the environmental impacts of the proposed project versus the "no action alternative" but that does not address air quality impacts. My testimony is intended to respond to that testimony indirectly, by pointing out an important issue that was not considered in their overall environmental analysis.

Q. What have you done to prepare your testimony?

A. I have reviewed section 3.2 of the Application and section 3.8 of the DEIS, the December 14, 1998 comments DEIS by the Oregon Department of Environmental Quality, as well as the portions of the testimony of Damien Hooper, Peter Comenzo, Dee Caputo and Mark Pedersen that address air quality issues. I have spoken with Gregory Flibbert, Eastern Washington Office of the Department of Ecology on March 2, 1999, about barge emissions in eastern Washington, and reviewed data supplied by the US Army Corps of Engineers Navigation Data Center. I have also spoken with Greg Grunow, Oregon Department of Environmental Quality on March 8, 1999, about barge emissions in the Portland/Vancouver area, and reviewed data he provided to me concerning annual emissions estimates for loading of gasoline to barges in the Portland area for the years 1993 to 1997.[1] I have reviewed Oregon Department of Environmental Quality files for air contaminant discharge permits for ARCO (No. 26-2030), Chevron (No. 26-2027), GATX (No. 26-2028), Mobil Oil (No. 26-2029), Texaco (26-2478), Time Oil (No. 26-2966), and Tosco (No. 26-2026). The files were reviewed on March 11, 1999.

Q. Peter Comenzo, Dee Caputo and Mark Pedersen testified that the analysis provided in the Application concerning air issues was "thorough," " complete" and "well prepared." Do you agree with their assessments?

A. Yes, insofar as the Application addresses the emissions likely to result from the proposed pipeline and terminal. The analysis in the Application, however, does not purport to compare the emissions associated with the proposed project with the emissions associated with the current methods of transporting petroleum products - the "no action alternative."

[1] I only used data from the years 1993 to 1996 because there is some uncertainty in the GATX (continued...)

Q. In his testimony, Damien Hooper expresses concern about the possibility of VOC emissions associated with pipeline and terminal operations. Are his concerns justified?

A. Yes and no. In general, the emission of volatile organic compounds (VOCs) are a cause for concern. VOCs are responsible for creating ground-level ozone, a primary component of smog. In some areas, such as the Portland-Vancouver airshed, VOC emissions are a particular problem and these areas may be designated as non-attainment or maintenance areas for purposes of the Clean Air Act. The VOC emissions associated with the proposed pipeline are not, however, a cause for concern. Dames & Moore analyzed the anticipated emissions in connection with preparing the Application and concluded less than 18 tons of VOC would be released each year. While causing only a nominal increase in VOC emissions, the proposed project would result in a substantial decrease in VOC emissions associated with barge loading in the Portland-Vancouver area.

Q. How significant are the VOC emissions associated with barge loading?

A. They are very significant. The Oregon Department of Environmental Quality (DEQ) has determined, and I have independently confirmed, that loading product onto barges for transportation up the Columbia River results in substantial releases of VOCs in the Portland, Oregon and Vancouver, Washington airshed. Barge loading—particularly the loading of gasoline—is a major source of VOC emission in the current transportation process. In fact, during a single day in August 1997, as much as 5.7 tons of VOC were emitted from gasoline loading to barges at only three Portland terminals. Overall, from 1993-1996, the VOC emission

(...continued)
terminal data for 1997.

associated with barge loading of *gasoline only* at Portland terminals ranged from 457 to 713 tons per year. Using these historical figures, I have performed calculations to estimate the reduction of VOCs that could be achieved by construction of the cross-Cascade pipeline. Conservatively estimating that the pipeline would reduce gasoline only loading onto barges by 60%, VOC emission would be reduced between 274 and 427 tons per year. If construction of the pipeline reduced gasoline only loading onto barges by 90%, VOC emissions would be reduced by between 411 and 641 tons per year. The following table summarizes my results assuming reductions of 60%, 70%, 80%, and 90% in gasoline only loading of barges resulting from construction of the pipeline:

Percent	60%	70%	80%	90%
Tons	274-427	320-499	365-570	411-641

Construction of the pipeline therefore would provide a significant net benefit to air quality in an airshed that has significant ozone problems. In fact, the Oregon Department of Environmental Quality has included the Cross Cascade Pipeline project as part of their Portland Area Ozone Maintenance Plan, and has submitted comments to the DEIS supporting the project.

DATED this 24th of March, 1999.

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Martha Moore